

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A four branch differential transmission system comprising:

a first shaft ~~[(10)]~~ and a second shaft ~~[(12)]~~, which constitute the input and output shafts~~[[,]]~~;

a third shaft ~~[(42)]~~ connected to a first variator ~~(44, 46)~~ arranged to increase or decrease its speed and;

a fourth shaft ~~[(48)]~~ connected to a second variator ~~(50, 52)~~ arranged to increase or decrease its speed~~[[,]]~~;

the four shafts ~~(10, 12, 42, 48)~~ being connected together by a spur gear compound epicyclic gearset including a plurality of toothed gearwheels,

~~characterised in that~~ wherein the compound epicyclic gearset comprises first and second epicyclic gearsets, the first epicyclic gearset being of positive type and comprising a first sun wheel ~~[(40)]~~ and a second sun wheel ~~[(28)]~~ in mesh with a respective set of first and second planet wheels ~~(24, 26)~~, each first planet wheel ~~[(21)]~~ being connected to rotate with a respective second planet wheel ~~[(26)]~~ about a respective common planet shaft ~~[(24)]~~, the planet shafts ~~[(24)]~~ being connected to a common planet carrier ~~[(22)]~~, the second epicyclic gearset being of negative type and comprising the first sun wheel ~~[(40)]~~ and a third sun wheel ~~[(38)]~~, the third sun wheel being in mesh with a set of third planet wheels ~~[(39)]~~, each of which is connected to rotate with a respective first and second planet wheel about a respective planet shaft ~~[(24)]~~, the first and third planet wheels ~~(24, 39)~~ or the first

and second planet wheels ~~(21; 26)~~ of each connected set of planet wheels being of different diameter and being connected together to constitute a stepped composite planet wheel.

2. (Currently Amended) ~~[[A]]~~The transmission system as claimed in Claim 1 ~~in which~~ wherein the set of third planet wheels ~~[[38]]~~ is in mesh with a set of fourth planet wheels ~~[[32]]~~ mounted to rotate about respective planet shafts ~~[[34]]~~ connected to the common carrier ~~[[22]]~~, each fourth planet wheel ~~[[32]]~~ being in mesh with a respective third planet wheel ~~[[39]]~~, whereby the third sun wheel ~~[[38]]~~ is in indirect mesh with the third planet wheels ~~[[39]]~~ and rotates in the same direction as the third planet wheels.

3. (Currently Amended) ~~[[A]]~~The transmission system as claimed in Claim 1 ~~[[or 2]] in which~~ wherein the common carrier ~~[[22]]~~ is connected to one of the input and output shafts ~~(10, 12)~~.

4. (Currently Amended) ~~[[A]]~~The transmission system as claimed in ~~any one of the preceding claims~~ Claim 1 in which wherein the common carrier ~~[[22]]~~ at least partially surrounds the first and second epicyclic gearsets.

5. (Currently Amended) ~~[[A]]~~The transmission system as claimed in ~~any one of Claim[s] 1 [[to 3]] in which~~ wherein the first sun wheel ~~[[40]]~~ is connected to one of the input and output shafts ~~(10, 12)~~.

6. (Currently Amended) ~~[[A]]~~The transmission system as claimed in ~~any~~
~~one of the preceding claims~~ Claim 1 in which wherein the input and output shafts-
~~(10, 12)~~ are coaxial.

7. (Currently Amended) ~~[[A]]~~The transmission system as claimed in ~~any~~
~~one of the preceding claims~~ Claim 1 in which wherein the variators comprise electric
motor/generators ~~(44, 46; 50, 52)~~, preferable arranged coaxially.

8. (Currently Amended) ~~[[A]]~~The transmission system as claimed in
Claim 7 ~~in which wherein~~ the stator connections of the two motor/generators ~~(44, 46;~~
~~50, 52)~~ are connected together via one or more controllers ~~(54, 53)~~ which may be
selectively operated to vary the electrical power transmitted between the two
motor/generators and thus to vary the transmission ratio of the transmission system.

9. (Currently Amended) ~~[[A]]~~The transmission system as claimed in ~~any~~
~~one of the preceding claims~~ Claim 1 including further comprising:

an outer casing, which is divided into a dry space ~~[[d54]]~~, in which the first
and second variators ~~(44, 46; 50, 52)~~ are accommodated, and an oil lubricated
space ~~[[56]]~~, in which the compound epicyclic gearset is accommodated.